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10/594,475

09/28/2006

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

05/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|------------------------------------|--|
| Office Action Summary | Application No. 10/594,475 | Applicant(s) OHTA ET AL. | |
| | Examiner Michael A. Marcheschi | Art Unit 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9</u> . | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

In the instant application, the limitations of claim 6 have been placed into claim 1, thus any rejection of previous claim 6 is now defined in relation to amended claim 1 and is not a new rejection.

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as obvious over Tamai et al. (144) in view of Kaufman et al. (382).

Tamai et al. teach in the abstract, column 3, lines 12-45, column 5, line 64-column 6, line 27, column 8, lines 33-35 and the claims, a polishing composition comprising 10+ weight percent fumed silica. The fumed silica has a bulk density of at least 70 g/l. The reference also teaches a method of making the fumed silica polishing composition.

The primary reference teaches all of the claimed limitations with the exception of the claimed additives, however, it is the examiners position that the skilled artisan would have appreciated and thus found it obvious to add any one of the claimed additives to the composition according to the primary reference because these additives are conventionally known to be added to polishing compositions depending on the polishing characteristics sought and this aspect would have been well within the scope of the skilled artisan with predictable results.

With respect to the process limitations, the reference clearly teaches these, however, assuming arguendo, applicants use process limitations to define the product and "product-by-

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process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as obvious over Kaufman et al. (382) in view of Tamai et al. (144).

Kaufman et al. teach in the claims, a polishing composition comprising 15 weight percent fumed silica, an oxidizer, a complexing agent and other components.

This reference is silent as to the bulk density of the fumed silica and the processing conditions used to make the slurry.

With respect to the bulk density, this is obvious motivated by the fact that the secondary reference teaches in column 6, lines 7-23 beneficial reasons to make a polishing composition by using fumed silica with the claimed bulk density.

With respect to the process limitations, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Applicant's arguments filed 4/7/08 have been fully considered but they are not persuasive.

With respect to Kaufman et al. (382), applicants argue that Kaufman is only directed to polishing the materials defined in the abstract of that reference (i.e. is specific to copper and copper containing material). This is not persuasive because (1) this reference never states that only these specific metals can be polished with the composition and (2) section [0042] clearly

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states that any type of metal may be polishing and in no way limits the metal to copper and copper containing alloys. Applicants refer to section [0025] of Tamai, however, it is to be noted that Tamai does not have paragraph numbers. In as much as this paragraph number relates to Kaufman, the teachings therein are noted, however, this does not negate the fact that Kaufman clearly teaches that any metal can be polished, as is set forth in section [0042]. Applicants characterization of this reference appears to be directed to the “preferred” limitations and it is well established that a reference is not only limited to these.

With respect to Tamai et al. applicants appear to argue that this reference is only directed to polishing insulating layers. This is not found persuasive because (1) the reference never states that only insulating can be polished with the composition, (2) although “polishing insulating layers” is a preferred embodiment, as is disclosed in column 7, lines 26-27, it is well established that a reference is not only limited to these and (3) the reference clearly teaches in column 3, lines 6-7 and column 7, lines 24-25 that the composition can be used to polishing semiconductor devices and this is a general teaching of any semiconductor device. As defined above, applicants characterization of this reference appears to be directed to the “preferred” limitations and it is well established that a reference is not only limited to these.

Specifically, with respect to combination based on Kaufman et al. (382) in view of Tamai et al. (144), as applied, applicants argue that since Kaufman is only directed to polishing copper and copper containing alloys and since Tamai is only directed to polishing insulating layers, the combination is improper because no motivation would be apparent to combine polishes based on specific different uses. This is not persuasive because (1) Kaufman et al. is not only limited to polishing copper and copper containing alloys, (2) Tamai is not only limited to polishing

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insulating layers but rather semiconductors substrates in general and this would broadly include substrates containing copper and (3) even assuming further arguendo, Kaufman et al. teaches in section [0042] that dielectric insulating layers can also be polished with the composition and this would be construed as insulating interlayers, as defined by Tamai, thus the two references are directed to polishing similar substrates.

With respect to combination based on Tamai et al. (144) in view of Kaufman et al. (382), applicants arguments are substantially the same as applied to the above rejection and the examiner has fully responded to these. In addition, irrespective of what the slurry is used for, the skilled artisan would have appreciated and thus found it obvious to add any one of the claimed additives to the composition according to the primary reference because these additives are conventionally known to be added to polishing compositions depending on the polishing characteristics sought and this aspect would have been well within the scope of the skilled artisan with predicable results. The motivation is that the skilled artisan, through knowledge they have, would have known that any polishing slurry can contain conventional polishing additives depending on the polishing characteristics sought. For example, one would know that if polishing acceleration was desired, the use of a polishing accelerator would be obvious and conventional.

In view of the above two reference teaching similar substrates to be polished, applicants reliance on no motivation is apparent because the reference are directed to polishing different substrates is not clearly understood and not a proper and convincing argument.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793